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L13 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 1990:225542 CAPLUS  
DN 112:225542  
ED Entered STN: 09 Jun 1990  
TI Complex additive to acid electrolytes for producing composite coatings  
based on nickel and nickel-cobalt alloy  
IN Ramanauskiene, D.; Medeliene, V.; Kupitis, G.; Eikher-Lorka, O. S.  
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SO U.S.S.R.  
From: Otkrytiya, Izobret. 1990, (7), 134.  
CODEN: URXXAF  
DT Patent  
LA Russian  
IC ICM C25D015-00  
CC 72-8 (Electrochemistry)  
Section cross-reference(s): 56

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	SU 1544847	A1	19900223	SU 1987-4383954	19871208
PRAI	SU 1987-4383954		19871208		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
SU 1544847	ICM	C25D015-00

AB The additive contains a N-containing heterocyclic compound To increase the hardness of the coatings, it addition contains Me cellulose 0.15-2.0 and a **betaine** of 2-(4-pyridyl)ethanesulfonic acid 0.3-1.5 g/L with the general formula  $R_2R_1CHCH_2N^+C_5H_4(CH_2)_2SO_3^-$ , where  $R_1 = H$  or  $OH$ ,  $R_2 = OH$ , or  $CH_2OH$ , or  $COOHCH_2N^+(CH_2CH_2OH)_3Cl^-$ .

ST **nickel electroplating additive; cobalt nickel electroplating additive; betaine cobalt nickel electroplating additive; pyridine deriv betaine electroplating additive**

IT Pyridinium compounds

RL: USES (Uses)

(**sulfoethyl** group-containing, hydroxides, inner salts, in **electroplating bath for nickel and cobalt -nickel alloys**)

IT 7440-02-0, Nickel, uses and miscellaneous 11101-13-6

RL: PROC (Process)

(electrodeposition of, complex additive for)

IT 9004-67-5, Methyl cellulose

RL: PRP (Properties)

(in **electroplating bath for nickel and nickel-cobalt alloys**)